



PHGB 000092

USA

I - II



INVESTOR IN PEOPLE

The Patent Office  
Concept House  
Cardiff Road  
Newport  
South Wales  
NP10 8QQ



I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

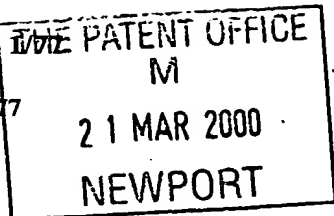
Dated

  
170 FEB 2001

**CERTIFIED COPY OF  
PRIORITY DOCUMENT**

An Executive Agency of the Department of Trade and Industry

**THIS PAGE BLANK (USPTO)**



**Request for grant of a patent**  
(See notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road  
Newport  
Gwent NP9 1RH

1. Your reference	PHGB 000030		
2. Patent application number (The Patent Office will fill in this part)	0006678.7		
3. Full name, address and postcode of the or of each applicant ( <u>underline all surnames</u> )	KONINKLIJKE PHILIPS ELECTRONICS N.V. GROENEWOUDSEWEG 1 5621 BA EINDHOVEN THE NETHERLANDS		
Patents ADP Number (if you know it)	7586605002		
If the applicant is a corporate body, give the country/state of its incorporation	THE NETHERLANDS		
4. Title of the invention	METHOD OF, AND MEANS FOR, DELIVERING INTERNET SERVICES OVER THE AIR		
5. Name of your agent (if you have one)	COLIN JAMES MOODY		
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)	Philips Corporate Intellectual Property Cross Oak Lane Redhill Surrey RH1 5HA		
Patents ADP number (if you know it)	7709843001		
6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority Application number	Date of filing
7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (day/month/year)	
8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer "Yes" if: a) any applicant named in part 3 is not an inventor, or b) there is an inventor who is not named as an applicant, or c) any named applicant is a corporate body. See note (d))	YES		

# Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form.  
Do not count copies of the same document.

Continuation sheets of this form

Description

15x2 ✓

Claims(s)

2x2 ✓

Abstract

1x2 ✓

Drawings

4x2 ✓

10. If you are also filing any of the following, state how many against each item:

Priority Documents

Translations of priority documents

Statement of inventorship and right

to grant of a patent (*Patents Form 7/77*)

Request for preliminary examination and

search (*Patents Form 9/77*)

Request for substantive examination

(*Patents Form 10/77*)

Any other documents

(*Please specify*)

11. I/We request the grant of a patent on the basis of this application.

Signature

*C J Moody*

Date

*20<sup>th</sup> March 2000*

12. Name and daytime telephone number of person to contact in the United Kingdom

01293 81 5278

C J MOODY

## Warning

*After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.*

## Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.*
- Write your answers in capital letters using black ink or you may type them.*
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.*
- If you have answered "Yes" Patents Form 7/77 will need to be filed.*
- Once you have filled in the form you must remember to sign and date it.*
- For details of the fee and ways to pay please contact the Patent Office.*

## DESCRIPTION

**METHOD OF, AND MEANS FOR, DELIVERING  
INTERNET SERVICES OVER THE AIR**

5

The present invention relates to a method of, and means for, delivering internet services over the air.

Internet services between an internet server and a personal computer (PC) have existed for some years. Some of these services include information retrieval and business activities such as banking, insurance and electronic commerce, so called e-commerce. More recently there have been developments to enable the internet services to be available to users of portable telecommunications devices such as cellular telephones. For the most part these services have been the downloading of data for display on a display panel built into the device.

15

There is a growing demand for more internet services, such as user selectable subscription services, to be made available to user of portable telecommunications devices.

20

According to one aspect of the present invention there is provided a method of delivering internet services to a user device having a client, comprising delivering the services as message packets containing commands and the client recovering the commands and using them to condition the user device.

25

According to a second aspect of the present invention there is provided an internet message delivery system comprising an internet server for generating messages including commands, packet message signal propagating means coupled to the server, and at least one packet message receiving user device, the user device including a client for conditioning the user device in accordance with the commands.

30

According to a third aspect of the present invention there is provided a user device for use in a system in which packet message including commands are sent from an internet service provider to the device, the user device including a client for responding to a received packet message by appropriately conditioning the user device.

According to a fourth aspect of the present invention there is provided a message signal generated by an internet server, the signal including commands for use by a client in a receiving user device for conditioning the user device.

The present invention will now be described, by way of example, with reference to the accompanying drawings, wherein:

Figure 1 is a diagram of an architecture of a service delivery model using various message delivery protocols,

Figure 2 is a flow chart illustrating the sending and processing of a short message packet by a client in a handset,

Figure 3 is a flow chart of a client passing a message packet and of a user responding to commands, and

Figure 4 is a diagram illustrating how a subscriber with a client can obtain subscriber service information.

Referring to Figure 1, the message delivery architecture comprises an internet server 10 which is coupled by suitable links to an application data base 12 which in turn is coupled to a content store 14, a user profile store 16 and to a billing system 18 by which a user is charged for the services provided. The billing system 18 is also linked to the internet server 10.

Users can fall in several categories depending on the method of delivery of messages from the internet server 10.

One category of delivery is by using a short message service (SMS) over the GSM network to an SMS enabled phone 20 which contains or has access to a "client", that is a software package capable of processing the SMS messages in a predetermined manner. More specifically the server 10 is

coupled to a short message service centre (SMSC) 22 which in turn is coupled to a Mobile Switching Centre (MSC) 24 of the network. The MSC 24 is coupled to geographically distributed base station transceivers 26 which propagate/receive messages to/from the SMS enabled handset 20.

5        A second architecture is based on the messages from the server 10 being relayed to a Wireless Applications Protocol (WAP) terminal 28 which sends and receives WAP messages to a WAP enabled handset 30 containing, or having access to, a client.

10       A third architecture is based on a PC 32 equipped with a client and a two way radio link to a web site 34 which is coupled to the server 10.

      The various messages are indicated by the letters (A), (B), (C) and (D). Message (A) relates to the handset 20 or 30 or the PC 32 requesting delivery of a service through the SMSC 22, WAP terminal 28 or the website 34, respectively. Message (B) is passed to the server 10 which recognises a  
15       server enabled service. Message (C) denotes the server 10 despatching the requested service to the device with added features and embedded command. Message (D) relates to the content/service being delivered by way of the SMS, WAP or WEB to the client device which creates the required enhanced end user experience.

20       Besides WAP and SMS message protocols other message protocols may be used such as USSD, GPRS (General Packet Radio System).

      For ease of description, the SMS protocol will be referred to generally in the following.

25       The SMS (Short Message Service) is defined within the GSM standard with the following characteristics:

      A short message is sent to one mobile phone number by a server connected to the network or by an individual mobile phone user.

      A single short message can be up to 160 characters of text in length (for languages that require UCS2 encoding the limit is 70 characters).

30       SMS is a store and forward service, in other words, short messages are not sent directly from sender to recipient, but always via an SMS Centre

instead. Each mobile telephone network that supports SMS has one or more messaging centers to handle and manage the short messages.

Short messages can be sent and received simultaneously with calls. This is possible because whereas voice, data and fax calls take over a dedicated radio channel for the duration of the call, short messages travel over  
5 and above the radio channel using the signalling path. As such, users of SMS rarely if ever have problems sending and receiving messages during peak network usage times.

SMS is becoming a significant revenue source for network operators.

10 The most important applications of SMS are:

Person to person messaging - This is the simplest and most direct application of SMS. From the end user's point of view, SMS may be a valid alternative to a voice call in certain circumstances:

15 If the information to be communicated is short, sending a SMS is usually cheaper than making a call.

If the recipient is not available to answer a call, it is always possible to send him a SMS that he will read on his own time. In the same way, if the recipient's phone is out of coverage, the SMS centre will store the SMS and send it when the phone is reachable again.

20 If the sender does not want to disturb bystanders in his or the recipient's vicinity then SMS is a quiet and convenient solution.

Notification of voice mail waiting - This is the most commonly used application today. An additional service option development is to translate the voice message to an SMS message and forward to user with an embedded  
25 number for redial. Some operators have extended this by offering an option to receive a notification when the customer receives email on his Internet .mailbox. The key differentiator is to create additional value added such as:

Redirection of the email to the nearest fax machine

30 Redirection of the email text to immediate voice to text or voice to text translation and forwarding to the users voice mailbox

Personal information services - Users can subscribe to services that offer information on a variety of topics (weather, stock market, sports,



horoscope, etc.) via SMS. The SIM toolkit which is in the GSM handset can enable more sophisticated and attractive services to be implemented.

By embedding commands or triggers in the SMS messages, various operations can be made to happen automatically on the phone. The  
5 embedded command within a SMS message can be encrypted messages sent by operators or service. The client in the user device causes the device and/or the user to interact with the service, for example, conducting a analysis of the device and reporting back or causing the user to phone. They can also be used as entertaining ways of making something happen to make your  
10 message delivery more interesting.

By enhancing the basic SMS capability, users of the SMS find it more enjoyable and useful. On the other hand, operators see them as a way to boost SMS usage, thereby generating new revenue. GPRS also extends the life time of SMS type services if the same techniques are applied to the faster  
15 and larger delivery capacities of GPRS.

The features of the SMS improvement project are intended to facilitate these needs as follows:

SMS melody attachment: With this feature the user can send a melody description via SMS. The melody can be saved and used as a ringer for  
20 signalling calls. It can also be sent again to another user via SMS. The melody can be created through the phone's user interface, or on a dedicated web site that sends it to the phone via SMS. This is a great way to personalize a phone because as mobile phone penetration increases, unique ringers to help determine just whose phone is ringing will become increasingly popular. It  
25 can also be used as a method to generate additional traffic by offering a series of ringers such as the top 10 charts on a weekly basis which can be downloaded so that the user receives the latest record theme.

SMS image attachment – This feature is a logical extension of the Emotion Icons concept pioneered with "Savvy" Registered Trade Mark, a  
30 cellular telephone manufactured by Philips Consumer Communications. Thanks to images, the user can get, while writing, some of the informality of the spoken communication. This is not only fun and nice, but also helpful to

have a correct communication. As a lot of people have experienced, brief, hastily written email can be misinterpreted and cause all sorts of trouble. Images can alleviate this because they convey feelings more easily than text ("an image is worth a thousand words"). This is evidenced by the popularity of Internet "smileys", emotion symbols such as :- ) or :- ( invented by email users in order to soften the impact of text. For SMS image attachments purposes, images can be found in a library on a dedicated server site that sends it to the handset via SMS. The site can also host an icon authoring software package so that the user can design his own unique images. Images which are downloaded in this method can be used as screen savers for the mobile phone.

SMS Animated image: By compressing a number of images, say 3 images, within an SMS message or E-SMS it is possible to create an animated image such as a bunch of flowers which opens from one image to the next in association with a message 'Happy Birthday'. The message SMS concatenation – This aims at going over the 160 character limit (70 for languages that require UCS2 encoding such as Chinese, Russian or Hebrew) by splitting a long message into several short messages, which are reassembled by the phone upon reception. While most users are currently happy with the length limit for person-to-person messaging, this can be insufficient for some information services. Moreover, predictive text input ("smart editor") makes it much easier to enter text, which may encourage users towards longer messages. Concatenated SMS is a key enabler for small games and applets to be downloaded into the Handset in addition to downloading email messages and longer documents including images necessary in richer applications.

#### Rationale – SMS-CB

SMS-CB (Cell Broadcast) is designed for simultaneous delivery of messages to multiple users in a specified area. Whereas SMS is a one-to-one service, Cell Broadcast is one-to-many (or point to multipoint). It enables messages to be communicated to multiple mobile phone customers who are located within a given part of its network coverage area at the time the

message is broadcast. Cell Broadcast is more akin to other mass distribution media such as teletext or Radio Data System (RDS). A SMS-CB message can contain up to 93 characters.

Services based on SMS-CB include: Advertising - Retail outlets in certain areas would be interested in sending customers and potential customers information such as sales, special offers, extended opening times and so on. Shopping centers, exhibition halls, airports and sports stadiums are the kinds of location that could be targeted for Cell Broadcast based services. Information services – SMS-CB is ideal for delivering local or regional information which is suited to all the people in that area, rather than just one or a few people. Examples include hazard warnings, cinema programs, local weather, flight delays, tourist information, parking and traffic information.

Local tariff – Offering a cheaper tariff when the customer is located in a particular geographical area is a way for mobile operators to take customers from landline operators. The user is notified that the cheaper tariff applies by a message or icon on the phone's display. SMS-CB is used to signal this information to the phone.

An internet server securing a SMS-CB broadcast channel from the Network Operator and offering a continuous stream of encrypted information to the handset, which information and can only be read via handsets equipped with the internet server's client having a specific encryption key. The key can only be switched on by the handset user subscribing to a service.

The SMS improvement package includes multi-page SMS-CB. Similar to SMS concatenation, this feature makes it possible to assemble up to 15 SMS-CB messages into one long text.

Features of the SMS improvement package include:

SMS melody attachment:

At least 5 personal melodies of 50 notes each will be available. The user will be able to use any of the fixed melodies or personal melodies as a ringer for signaling incoming calls.

The user will be able to edit and save each personal melody with the melody editor. In addition it will be possible to define a name for the new melody.

5 The user will be able to select a melody and send it via SMS to another user, either from a Ringers submenu or as an option in the SendMessage submenu. The melody's name will be transmitted along with the message.

10 Upon reception of a message containing a melody, the MMI will signal the message normally. When the user opens the message for reading, the melody will ring at the low volume level. Among the received message options, the phone will offer a possibility to save the melody as a personal melody. The user will select the personal melody in the list. Of course, any already existing personal melody in the same position in the list will be overwritten when the user selects it (a confirmation screen will offer the user a chance to change his mind).

15 A message with an attached melody will also include text and an animated Emotion Icon if the user so chooses.

#### Multi-page SMS-CB:

The phone will be able to decode SMS-CB messages of up to 15 pages.

20 Messages will be stored in the phone's non-volatile memory and ordered according to their topic, based on the SMS-CB types. If the SMS-CB Index is available, the SMS-CB menu will automatically show the names of the topics, otherwise the user will be able to create names for the topics and link them to the code types (e.g. 440=Traffic, 520=Weather 292= Share prices).

25 The phone will store the most recent message for each of up to 10 topics. The user will be able to consult them on his own time.

#### SMS image attachment:

30 The phone's non-volatile memory will be able to store up to 10 images, 5 of which will be pre-programmed in the configuration center. The user can delete them to replace them with his own.

The user will be able to select one of the images to send via SMS, along with a text of at most 25 characters.

Upon reception of a message containing an image, the MMI will signal the message normally. When the user opens the message for reading, the image will be shown along with the text. Among the received message options, the phone will offer a possibility to save the image as a personal image. Of course, any already existing image in the same position in the list will be overwritten when the user selects it (a confirmation screen will offer the user a chance to change his mind).

A non-mandatory, optional feature is to use the image as welcome screen graphics.

The image will be sent in a compressed format so that only 1 SMS is required to send it. It is expected that the maximum image size should be in the range of 30\*30 to 35\*35 pixels. However the image can be expanded by the client.

The user will have the possibility of defining his own image by combining picture elements chosen in a menu (for example, a list of noses, a list of eyes, a list of mouths, a list of haircuts – the user combines one of each to create a face). This is the so-called "Mister Potato" feature, which could be attractive to the Amuse Me segment.

A plurality of SMS can be concatenated into one big message. This message is presented to the user exactly as a normal message. It will be possible to attach larger images, requiring several SMS for sending.

It will be possible to attach both a melody and an image – this will require at least 2 SMS for sending.

Figure 2 illustrates the operations when the GSM network sends a packet message to a handset 20 (Figure 1) including as embedded client. The block 40 denotes the handset receiving a message in accordance with say the SMS, USSD or GPRS protocol. The block 41 indicates the client carrying out a parse operation which includes recovering encrypted commands. The block 42 indicates the handset itself operating in accordance with the commands which may require the handset to generate a response which is sent as a short message.

If this is the case then block 42 relates to obtaining a result which in block 44 is formatted by the client for onward transmission by the relevant short message service such as SMS, USSD or GPRS.

The service provider creates the commands which may be included in the packet message to the handset. By way of example only a set of embedded commands are as follows. The client in the handset parses the packet message to obtain the desired result. The commands are:

5    /F 22            Set Font size for text e.g ABC → ABC  
      /R x            Repeat next operation e.g. Beep → Beep.Beep.Beep  
 10   /S GSM number Set Handset SMSC (Short message service centre) number,  
                       required to send packet.  
      /E              Enable Feature (handset dependent)  
      /D &&&&        Perform handset dependent test/diagnostic check  
      /C x            Set Channel For Cell Broadcast,  
 15   /M —           Define handset menu & application  
                       e.g. "Server"  
                           Choice 1→Command 1  
                           Choice 2→Command 2  
                           Choice 3→Command 3  
 20                    Choice 4→Command 4  
                       etc  
      /U              Prepare for remote upgrade of handset firmware  
      /F              Apply Firmwave Fix  
      /I              Insert data record to Agenda/Address/ToDo Alarm e.g.  
 25                    00/03/13.meeting with client  
                       to set appointment on handset  
      /SCR —        Load standby screen to handset

An example of an interactive command is to ensure that a new handset on the network is registered with the internet service provider and/or network operator for say warranty reason. In order to register the handset various items of information need to be obtained, such as the user's name, the user's address, handset manufacturer, model type and serial number. The

fields into which the information is entered field by field. Once all the fields have been completed, the user is asked to confirm that the information is correct. If this is done then the client composes a message packet which is relayed via a short message service to the service provider. Figure 3 illustrates the steps involved. Block 45 denotes the client embedded in the new handset parsing the received registration packet message. Block 46 denotes the various interactive actions by the user and block 47 denotes the client preparing the response message which is transmitted as a packet.

An example of the value of the service provider knowing details of the handset is that if the user believes that the handset is malfunctioning, the user notifies the service provider. In response the service provider can send a diagnostic message, which may comprise concatenated SMS messages, to the handset. The client in response to the commands in the diagnostic message automatically checks various features of the handset and enters the answers into a reply packet message which is sent back to the service provider for analysis. If as a result of the analysis it is determined that faults are present which can be corrected by modifying the software then further messages are sent to the handset.

A convenient method for handling software changes is for the handset's processor to include a patch ROM in the form of an EEPROM as a separate memory or as a dedicated part of the main memory which may otherwise be a flash memory. In operation the handset's processor has to check the patch ROM before proceeding from one step to the next just in case the software has been modified.

In the case of a handset not having a patch ROM or an equivalent area in the main memory, the client may just carry out a "yes/no" and relay the results as a packet message.

In another example, the user of a handset may wish to take advantage of a service offered by the service provider such as enabling the user to make a lottery entry. In such a case the message packet sent by the service provider includes a command whereby the client creates a field in the display for the user to enter his/her lottery numbers, for example six 2 digit numbers

for the user to enter his/her lottery numbers, for example six 2 digit numbers and perhaps another field for a "lucky dip" entry. Once all the fields have been confirmed, the client formats a packet message which is transmitted to the service provider. The service provider then contacts the lottery operator by  
5 say e-mail and the entry is made. Payment can be done monthly or by the user entering his credit card or cash card number.

Other applications of this type of message include buying tickets for the theatre or other events and making reservations. Once the user has indicated the nature of his request, the commands in the packet message are tailored  
10 accordingly.

Another application of sending commands to a client in a handset or other terminal over the air is in the provision of subscription services. Since cellular telephone systems such as GSM have a cellular structure with each cell having at least one base station, it is possible to focus information such as  
15 local news, road conditions and advertising to subscribers in a cell, groups of cells or in a special case nationally. The subscribing handsets will have to have a client which is enabled and the information is transmitted as encrypted point to multipoint packet signals. In the case of a non-subscribing handset receiving the encrypted packet, it will simply store/discard the message packet  
20 as it is unable to decrypt it.

More particularly there exists SMS-CB system which has provision for 90 channels some of which are dedicated to certain services. However an internet server being allocated a channel for its own use can transmit a continuous subscription service message comprising repeating sequences of  
25 concatenated packets. Each packet in a sequence being allocated to a particular topic such as sport, weather, stock exchange prices and so on. One way of offsetting the cost of subscription services would be to provide advertising which would be carried as one packet in each of the repeating sequences. Thus a subscriber having an enabled client would periodically  
30 receive advertisements in a manner similar to UK commercial television. A similar principle may be used to carry local news, local road traffic information or for emergency messages.



Another form of providing a subscription service is shown in Figure 4. A subscribing handset has a number of key words downloaded to it in a packet message from the service provider. These key words such as "sport", "weather", "shares", are held by the enabled client in the handset 50. When the subscriber wants to determine up to date sports information, the word "sport" is entered either using a man-machine interface (MMI) or using voice recognition and a message packet is relayed to the service provider 52. The service provider which has entered a contractual arrangement with various dedicated web based information providers 54A, 54B, 54C passes the word "sport" and redirects the request to the selected web based information provider 54B using the information provider's URL.

The information provider 54B directly interacts with the subscriber 50 who selects the type of sport and is supplied with the desired information.

Billing of the subscriber may be by the web based information provider 54B invoicing the internet server 52 which composes a monthly bill for all the services provided during the preceding month and submits it to the subscriber.

An alternative method of billing is for the subscriber to having the costs of the usage of the subscription services added automatically to his/her telephone bill. A technique for doing this can be based on the use of premium rate telephone lines. The subscriber 50 initially contacts the internet server 52 on what in the UK is a free 0800 number. The service provider 52 on determining that the subscriber wants a subscription service re-routes the call to the web based information provider 54B as a premium rate 0870 number and the information is supplied to the subscriber 50 at the premium rate. At termination of the call, the subscriber is returned to an 0800 number. The subscriber receives a telephone bill and remits the cost to the network provider (or telephone company) which in turn pays the internet server 52.

A more tedious way of supplying subscription services is for the internet server to respond to a subscription service request by sending a message packet to the client in the subscriber's handset which causes a main menu to be displayed. The subscriber having selected the service, say "horoscopes", is then presented with a first submenu of the different signs. The subscriber

selects the desired sign and the horoscope is displayed. This interaction may require an exchange of message packets between the internet server and the subscriber.

5 The description up to now has assumed that the client is embedded in the handset at the time of manufacture or subsequently. However a handset may not have the memory capacity to store the client. As an alternative, the client may be stored on the SIM card which when present in the handset enables it to receive packet messages and decrypt the commands using the SIM Toolkit which is already present in the handset for use in the GSM system.

10 In the case of a subscriber unit being required to operate as a WAP/WEB browser, then the client can be implemented as a plug-in element. If necessary the client is delivered to a WAP browser on a WAP enabled handset via the internet.

15 In another variant the subscriber unit comprises a television receiver capable of receiving teletext information. By embedding a client in the television receiver and associating it with a specific page or pages then information can be relayed by the internet server parsing the information to include commands. The parsed information is relayed to the teletext centre for inclusion on a specific page and the parsed information is transmitted in the same manner as other text signals. By doing this it is possible for the internet server to target e-mail messages, short messages and embedded messages to the client which are transposed on the screen of the television receiver.

25 In the case of a subscriber wanting to store say diary information at the internet server then one method by which this may be done is for the internet server to transmit a message packed to the client which displays say time, days, dates (day, month, year) as a series of lines of respective indicia which are scrolled in a horizontal direction. A user selects time by highlighting a time in the time line and the highlighted time is loaded by the client into a slot in a packet message being compiled. The user then selects the day by highlighting the relevant day and this too is loaded into the packet message. 30 This cycle is repeated for the other items and when the packet is complete the subscriber is asked to confirm that it is correct. The packet message is then

relayed to the internet server and the required diary entry is stored. Optionally the internet server can generate an alert to be relayed to the handset where say a distinctive ringing sequence is generated by the client.

5 A method of purchasing or searching service data bases such as timetables is for a subscriber to be able to send a voice message which is recognised by a simplified integrated voice recognition system in the internet server and causes the item or service to be selected. A decision tree may be relayed as a message packet for the client to display on the handset. The subscriber can then navigate through the decision tree and the results are  
10 relayed to the internet server.

In the present specification and claims the word "a" or "an" preceding an element does not exclude the presence of a plurality of such elements. Further, the word "comprising" does not exclude the presence of other elements or steps than those listed.

15 From reading the present disclosure, other modifications will be apparent to persons skilled in the art. Such modifications may involve other features which are already known in the design, manufacture and use of internet servers and component parts therefor and which may be used instead  
20 of or in addition to features already described herein. Although claims have been formulated in this application to particular combinations of features, it should be understood that the scope of the disclosure of the present application also includes any novel feature or any novel combination of features disclosed herein either explicitly or implicitly or any generalisation thereof, whether or not it relates to the same invention as presently claimed in  
25 any claim and whether or not it mitigates any or all of the same technical problems as does the present invention. The applicants hereby give notice that new claims may be formulated to such features and/or combinations of such features during the prosecution of the present application or of any  
30 further application derived therefrom.

## CLAIMS

1. A method of delivering internet services to a user device having a client, comprising delivering the services as message packets containing commands and the client recovering the commands and using them to condition the user device.
2. A method as claimed in Claim 1, characterised in that the services are delivered as short message service (SMS) packet messages, and in that the user device is SMS enabled to receive the SMS messages.
3. A method as claimed in Claim 1, characterised in that the services are delivered by wireless applications protocol (WAP) and in that the user device is WAP enabled.
4. An internet message delivery system comprising an internet server for generating messages including commands, packet message signal propagating means coupled to the server, and at least one packet message receiving user device, the user device including a client for conditioning the user device in accordance with the commands.
5. A system as claimed in Claim 4, characterised in that the packet message signal propagating means includes means for formatting the messages as short message service (SMS) packet messages and in that the user device comprises a SMS enabled phone.
6. A system as claimed in Claim 4, characterised in that the packet message signal propagating means includes a wireless applications protocol (WAP) means and in that the user device comprises a WAP enabled phone.
7. A system as claimed in Claim 4, 5 or 6, characterised in that the client is embedded in the user device.

8. A system as claimed in Claim 4, characterised in that the client is embedded in a teletext type of television receiver.

5 9. A system as claimed in Claim 4, 5 or 6, characterised in that the client is embedded in a device which is mechanically and electrically connectable to the user device.

10 10. A system as claimed in any one of Claims 4 to 9, characterised by a subscriber service web site operatively coupled to the internet server.

15 11. A user device for use in a system in which packet message including commands are sent from an internet service provider to the device, the user device including a client for responding to a received packet message by appropriately conditioning the user device.

20 12. A message signal generated by an internet server, the signal including commands for use by a client in a receiving user device for conditioning the user device.

25 13. A method of delivering internet services, substantially as hereinbefore described.

30 14. An internet message delivery system constructed and arranged to operate substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

15. A user device constructed and arranged to operate substantially as hereinbefore described.

16. A message signal substantially as hereinbefore described.

## ABSTRACT

**METHOD OF, AND MEANS FOR, DELIVERING  
INTERNET SERVICES OVER THE AIR**

5

A method of delivering internet services to portable terminals, for example cellular phones (20, 30), in which an internet server (10) generates messages including commands. The messages are propagated as short message service packets or WAPO packets to the terminals (20, 30). The  
10 terminals include clients which are able to recover the commands and use them to condition the terminal to process the message.

(Figure 1)

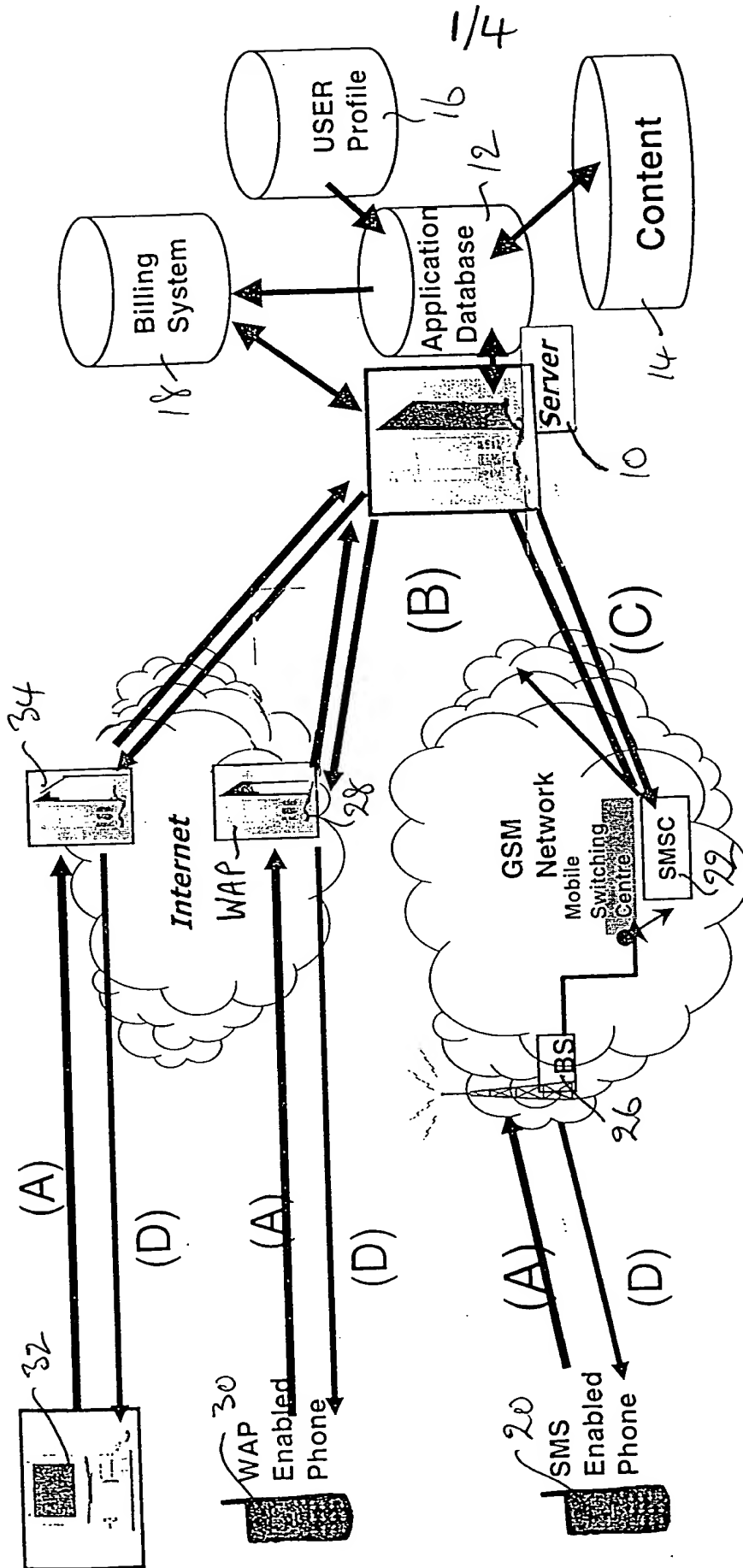


Fig. 1

2/4

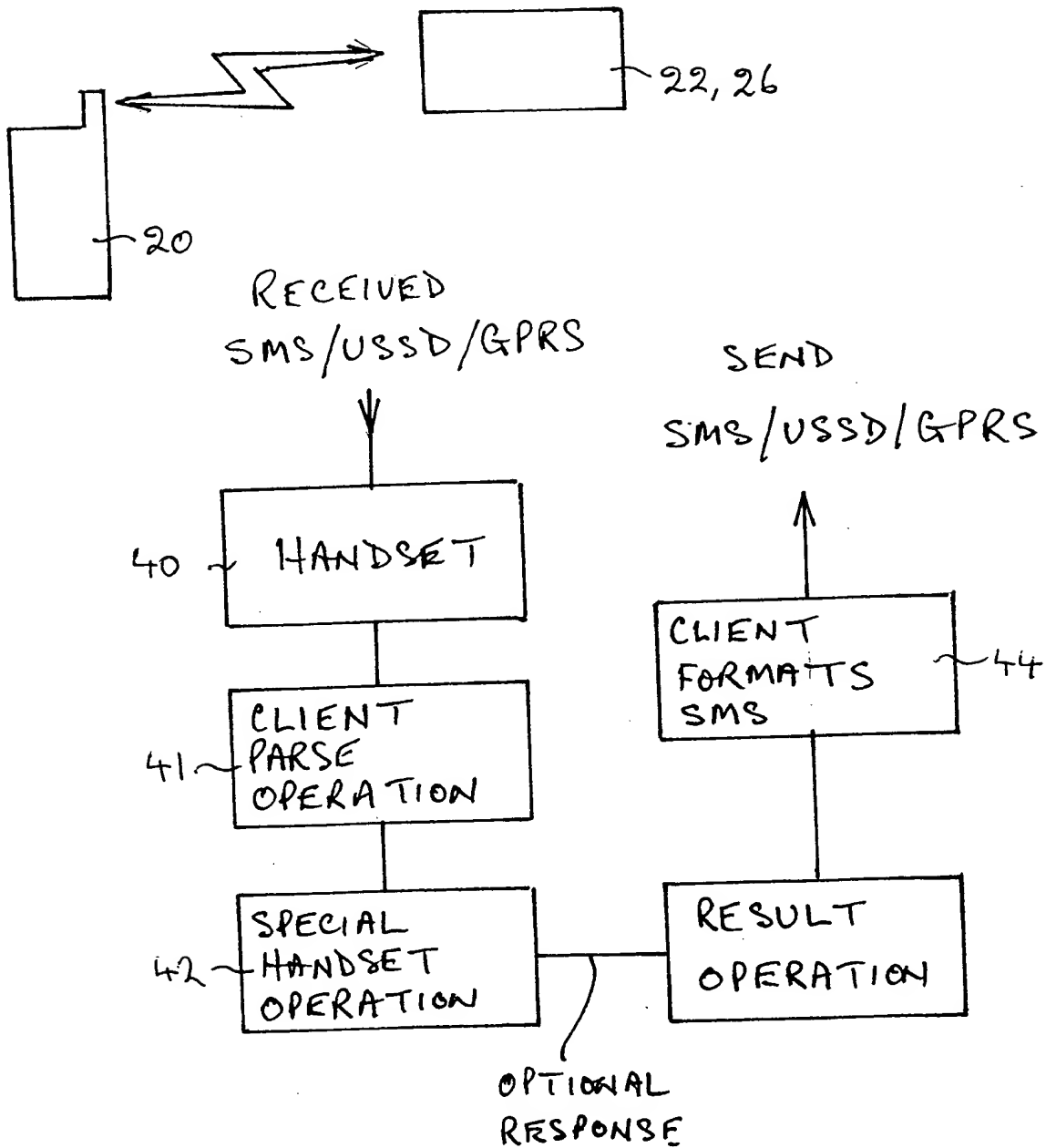


Fig. 2



3/4

EMBEDDED FORMS LANGUAGE  
CUSTOM SMS/USSD/GPRS FORMAT  
COMMANDS

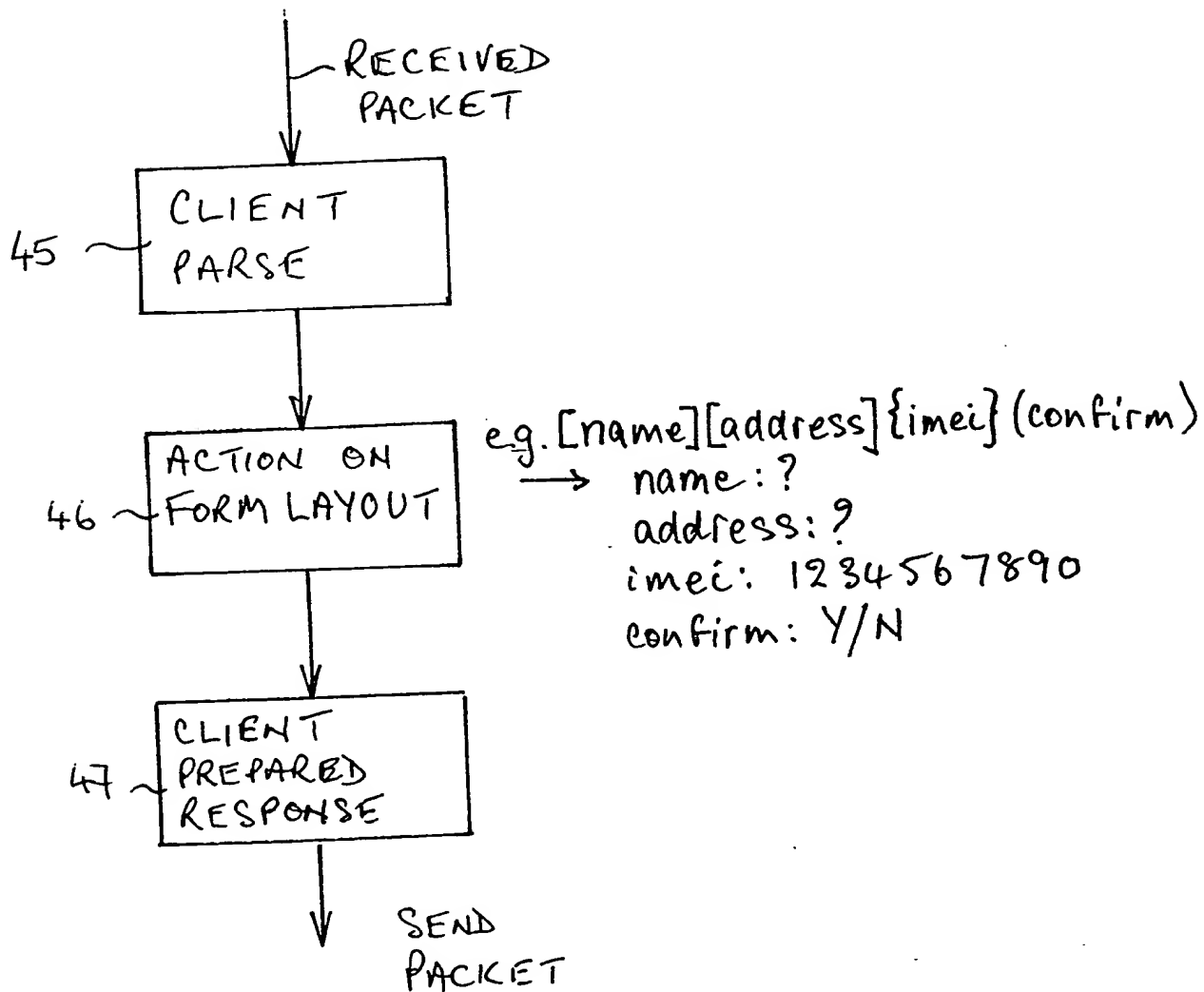


Fig. 3

4/4

# TEXT TAGGING KEY WORDS TO SPECIFIC DELIVERY SERVICE ALLIANCE

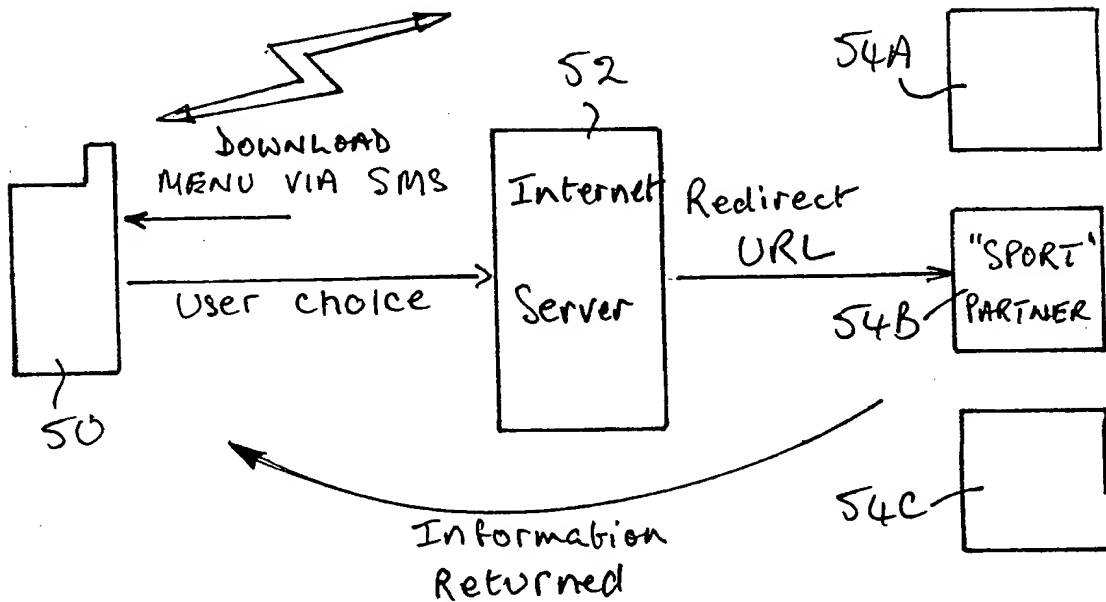


Fig. 4

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**

**THIS PAGE BLANK (USPTO)**